



**SUBMISSION**

**TO**

**DEPARTMENT OF INFRASTRUCTURE  
AND PLANNING**

*Northern Link Road Tunnel project*

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**Prepared By:**

External Relations Division, The Royal Automobile Club of Queensland Limited

**Date:**

December 2008

17 December 2008

**EIS Project Manager  
Northern Link Road Tunnel project  
Infrastructure and Economic Development Group  
Department of Infrastructure and Planning  
PO Box 15009  
CITY EAST QLD 4002**

Dear Sir/Madam,

**Re. RACQ's comments on the Northern Link Road Tunnel project**

The RACQ supports the Brisbane City Council's efforts to address congestion and welcomes the opportunity to comment on the Northern Link Road Tunnel project. Our comments are based on the information provided in the *Northern Link Environmental Impact Statement: In Brief Document, September 2008*, the *Northern Link Newsletter, October 2008* and the *Northern Link Environmental Impact Statement CD-rom, September 2008*.

Our comments also refer to recent submissions made by RACQ to Infrastructure Australia, the Western Brisbane Transport Network Investigation (WBTNI) and the Brisbane City Council Transport Plan available from the racq.com website.

**1.0 General comments**

The RACQ supports the need for additional road infrastructure in the north and west of Brisbane. Many of the comments in this submission are offered to help ensure that the benefits of Northern Link are maximised by meeting trip demands along the corridor. This will require upgrades of associated links that will experience an increase in trip demand.

However the RACQ is concerned that Northern Link has not been compared objectively and expertly with alternatives such as surface road upgrades, a no-toll option and a North West Motorway with Stafford Road upgraded, to ensure that the maximum value is obtained from this large public and private investment in our road network.

A number of RACQ submissions have recommended further investigation of a North West Motorway. We believe a north-south bypass, with an east-west orbital using Stafford Road and Airport Link, would provide significant congestion relief to the north and west of Brisbane. This should be assessed directly against the proposed Northern Link tunnel. It is likely that traffic modelling and cost benefit analysis would confirm a North West Motorway as the superior project. RACQ's submissions to Infrastructure Australia, the Western Brisbane Transport Network Investigation

(WBTNI) and the Draft Brisbane City Council Transport Plan for Brisbane provide further detail on the economic and strategic benefits of a North West Motorway.<sup>1</sup>

## **2.0 Economic analysis**

### **2.1 Cost benefit analysis**

The economic evaluation of Northern Link as a tolled-tunnel generated only modest returns using favourable assumptions. The RACQ is confident that greater community benefit would be obtained by providing Northern Link without a toll, as increased traffic through Northern Link would reduce congestion on much of the surrounding road network.

The Environmental Impact Statement (EIS) notes that from an economic perspective, the Northern Link project aims to achieve<sup>2</sup>:

- Improved transport efficiency by way of travel time savings, reduced vehicle operating costs, reduced congestion and greater road safety;
- Improved journey time reliability;
- Enhanced accessibility and road connectivity to/from the western suburbs and Toowong and the Central Business District;
- Public transport benefits resulting from improved journey time for express buses using the tunnel;
- Noise, air quality, health and other amenity improvement; and
- Value for money from any public expenditure to be allocated to the Project.

Given significant capital expenditure of \$2.7 billion for this tunnel, the EIS includes a cost benefit analysis to assess the economic viability of Northern Link. At a 6 percent discount rate, the analysis generated a benefit cost ratio (BCR) of 1.2 and net present value of \$550 million, primarily through benefits attributable to vehicle operating costs and travel time savings. Together these account for 91.5 percent of Northern Link project benefits.

Without the imposition of a toll, economic returns to the Northern Link project would be higher. The toll diverts 25,000 vehicles per day, many of which would use other routes including Milton Road and Coronation Drive.

### **2.2 Sensitivity analysis**

While a discount rate of 6 percent was adopted for the EIS business case<sup>3</sup>, economic analysis was also conducted using higher and lower discount rates of 8 percent and 4 percent. The higher discount rate of 8 percent provides a more realistic assessment given that Northern Link is anticipated to be largely privately funded.

The application of discount rates is a controversial issue, however there are valid arguments to support the need for higher discount rates to be used when analysing

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<sup>1</sup>[http://www.racq.com.au/\\_\\_data/assets/pdf\\_file/0003/19650/RACQ\\_Submission\\_to\\_Infrastructure\\_Australia\\_Oct\\_2008.pdf](http://www.racq.com.au/__data/assets/pdf_file/0003/19650/RACQ_Submission_to_Infrastructure_Australia_Oct_2008.pdf)

[http://www.racq.com.au/\\_\\_data/assets/pdf\\_file/0011/11234/RACQ\\_Submission\\_to\\_WBTNI\\_Aug\\_2008.pdf](http://www.racq.com.au/__data/assets/pdf_file/0011/11234/RACQ_Submission_to_WBTNI_Aug_2008.pdf)

[http://www.racq.com.au/\\_\\_data/assets/pdf\\_file/0011/11261/RACQ\\_Submission\\_to\\_draft\\_BCC\\_Transport\\_Plan.pdf](http://www.racq.com.au/__data/assets/pdf_file/0011/11261/RACQ_Submission_to_draft_BCC_Transport_Plan.pdf)

<sup>2</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 15 – Economics, p44

<sup>3</sup> In accordance with Queensland Department of Main Roads guidelines

privately funded projects, including: the inability for private business to pool risks as well as government; taxation effects; and a higher cost of borrowing. The current economic crisis has curtailed the availability of credit and is expected to have a large negative impact on highly debt-leveraged projects.

Analysis using the 8 percent discount rate results in a BCR below 1, at 0.9, and a net present value of -\$106 million<sup>4</sup>, indicating that Northern Link is not economically viable under these circumstances. On this basis, alternative options such as those discussed below, should be considered.

## **2.3 Alternative options**

The RACQ calls for proper consideration, including traffic modelling and economic analysis, of a range of realistic alternatives to Northern Link. The EIS did not seriously consider any real alternative option.

The first alternative scenario should include a range of surface road upgrades, particularly at intersections identified as bottlenecks, in association with optimised public transport services.

The second alternative scenario would be provision of Northern Link as a free road. All road infrastructure projects should be evaluated and publicly reported with 'no toll' options to identify whether other funding mechanisms, such as an inner-city congestion charge, should be more meaningfully investigated.

The third alternative scenario would be provision of the North West Motorway as proposed by RACQ in our submission to Infrastructure Australia. This would provide a realistic alternative tunnel design. The comparison of these options would help identify the preferred strategic role of different corridors through this part of Brisbane.

### **2.3.1 Optimising surface roads**

It was disappointing that little attention was given to the alternative of optimising surface road transport. This alternative included increasing lane capacity on a number of roads, including a doubling of Milton Road lane capacity from 4 lanes to 8 lanes or Coronation Drive from 6 to 8 lanes. Discussion of this alternative, or other possible improvements such as isolated road widening or grade separation of key intersections, in *EIS Volume 1: Chapter 2 – Project Rationale* was largely restricted to negative community, environmental and property acquisition impacts, with no comparable outline of benefits. It is possible that by avoiding expensive tunnelling, project costs under this alternative could be less than the proposed option. As no cost benefit analysis is provided in the EIS, it appears that this option was rejected on political grounds rather than any analysis of traffic and economic impacts.

### **2.3.2 A non-tolled Northern Link Tunnel**

The RACQ is confident that greater social benefit and equity outcomes would be achieved by not tolling Northern Link. Tolling the infrastructure will diminish the potential for Northern Link to provide congestion and user benefits on the surrounding surface road network. According to the *Northern Link EIS Technical Paper No 1 – Traffic and Transport*, in 2014 potential usage of Northern Link will be reduced by 32 percent and 25,000 vehicles per day will choose to stay on existing surface roads due to the proposed toll of \$3.93 (in 2008 dollars). Reducing or

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<sup>4</sup> Analysis at risk level P50

removing the toll would reduce travel times and vehicle operating costs and result in a higher BCR. Because the toll reduces economic benefits, other funding options should be more meaningfully considered.

This would lead to public discussion and understanding of the relative strengths and weaknesses of different road funding options. It is regrettable that Brisbane City Council rejects consideration of more efficient funding mechanisms in favour of a demonstrably inefficient tolling scheme.

### **2.3.3 North West Motorway**

The RACQ recommends that Northern Link be assessed directly against a North West Motorway. We believe a North West Motorway would emerge as the superior project, with greater social benefits flowing from broader congestion relief that this full bypass and ring road solution would offer.

In order to form a comparable project scope to a North West Motorway, Northern Link should be combined with a major capacity upgrade of Gympie Road from Kedron to Carseldine. This should assess the merits of having three major north-south corridors through the north of Brisbane compared with the existing two (Gympie Road and Gateway Motorway). It should also assess the merits of distributing the east-west travel demand on the north of Brisbane across a middle ring (Stafford Road and Airport Link) and an inner ring (Inner City Bypass) rather than concentrating demand on the inner ring.

An important objective of our road network as it grows in complexity and caters for higher demand is the resilience to incidents and breakdowns. Brisbane City Council and the Department of Main Roads have progressed a number of valuable initiatives to coordinate our traffic management systems and clear the road network of incidents as quickly as feasible. There remains, however, concerns that focussing all four toll road projects, including Northern Link, on the Inner City Bypass, would create a situation where one breakdown or other incident could spread gridlock across much of Brisbane's road network within a very short time. This dependence on the Inner City Bypass is a strategic issue that is not captured within the existing traffic and economic modelling. This is discussed further in Section 3.2.

## **2.4 The impact of tolling roads**

While tolls can generate revenue for a new road, they are inherently inefficient and divert potential users back onto the congested surrounding road network. The RACQ does not support imposing an additional cost on motorists when the existing regime of motoring and fuel taxes already cover the social costs of road use.

Toll roads also create equity distortions by penalising specific geographic locations and trip routes while favouring higher social economic status individuals who have higher time values. The wealthy will travel congestion-free through the tunnel while others travel on the surface network that remains congested to ensure that the private toll operator receives sufficient return on investment.

The congestion reduction potential of Northern Link as a tolled tunnel will not be maximised because 32 percent of potential users will choose to stay on existing surface roads such as Coronation Drive and Milton Road.<sup>5</sup> This will reduce the efficiency of both the new infrastructure and the surrounding road network.

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<sup>5</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, p9-197

The percentage of potential users not prepared to pay the toll could be much higher than 32 percent. The experience of toll roads in Sydney and Melbourne has demonstrated that accurately forecasting vehicle usage and the impact of tolls is difficult. For example, traffic on Melbourne's Eastlink Motorway fell by over 50 percent when tolls were imposed after the first month of free travel.

If a stated purpose of Northern Link is to alleviate congestion, any toll levied on Northern Link should be priced to ensure the tunnel is not under-utilised, thus maximising its congestion-reduction potential. This conflicts with the financial imperative to set the toll at a rate that maximises profits. Toll roads and public private partnerships (PPP) prioritise financial returns over economic performance so they reduce the benefits to society.

Inefficiencies associated with toll roads are more evident when the road is privately owned and operated with traffic projection risk borne by the private operator. Transferring traffic risk to a private business that has little control over traffic volumes implies an excessive risk transfer. The cost of assuming this market risk is priced into the toll and passed onto motorists.

To provide Northern Link without a toll would require an alternative source of funding. Inner-city congestion pricing, established in conjunction with toll-free bypass roads and improved public transport alternatives, could provide this. Well-designed congestion pricing can generate revenue to fund new transport infrastructure and significantly reduce congestion, as evidenced by the large reductions in congestion where congestion pricing has been implemented overseas.

Pricing and travel demand management to optimise vehicle use, particularly during peak periods, is listed in the EIS as a Northern Link objective and the EIS states that the toll tunnel partially achieves this objective.<sup>6</sup> Unfortunately, it will do so at the cost of reduced economic efficiency. The RACQ would welcome the opportunity to work with the Brisbane City Council and Queensland Government on alternative funding mechanisms, such as inner-city congestion pricing with toll-free bypass roads. Such a scheme would prove more equitable for motorists than toll roads and could generate significant economic benefits through congestion reduction.

### **3.0 Traffic Analysis**

#### **3.1 Effects on the road network**

The Northern Link EIS states that<sup>7</sup>:

*'Kelvin Grove Road to the immediate north of the project, is forecast to experience a 17% increase in daily traffic by 2026 with effects diminishing further north. Traffic increases can be satisfactorily managed with proposed project intersection works at the connection;'*

The Northern Link EIS states that, due to Northern Link, there will be<sup>8</sup>:

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<sup>6</sup> Northern Link Environmental Impact Statement: Volume 1 Chapter 2 – Project Rationale, p2-34

<sup>7</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, p1-16

<sup>8</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, p1-15

*'negligible overall traffic changes within the Airport Link/Lutwyche Road corridor and on Kingsford Smith Drive;'*

No specific percentage increase in traffic using Lutwyche Road (south of Stoneleigh Street) due to Northern Link has been provided in the Northern Link EIS. However, *Figure 5-43 – 2014 Corridor Traffic Changes with Northern Link* reveals a significant increase in traffic volumes using Lutwyche Road as a direct result of Northern Link. This traffic volume increase is even more significant in the 2026 forecast shown in *Figure 5-44*.

Based on the information above, Kelvin Grove Road (north and south of the tunnel connection) and Lutwyche Road, which are already heavily congested corridors, will both experience an increase in traffic volumes with Northern Link.

However no road upgrades outside the immediate tunnel area are planned to accommodate these increases, nor meet the future trip growth demand predicted for the metropolitan area of 13% by 2014, and 34% by 2026, even with a doubling of public transport trips.<sup>9</sup>

The RACQ believes that more attention needs to be given to addressing the adverse effects of Northern Link on the existing surface road network remote from the project area. Roads that have significantly increased traffic demands placed on them as a direct result of the project should be upgraded as part of the project scope. This includes:

- Lutwyche Road;
- Kelvin Grove Road and Enoggera Road north and south of the Northern Link tunnel connection; and
- Centenary Motorway / Western Motorway corridor

The RACQ, in responding to the *Airport Link (AL) EIS* and the *Northern Busway (NB) Draft Concept Design and Impact Management Plan (CDIMP)* (December 2006) on traffic forecasts for Lutwyche Road, stated that:

*'Table 20-36 of the "NB Draft Concept Design and Impact Management Plan" (CDIMP) indicates a 25 percent reduction in traffic from 2004 to 2012 with the AL and NB in place in the vicinity of Albion Road. But, this will be more than offset by a reduction in road capacity of one third through confiscation of general traffic lanes for bus lanes. So, congestion would worsen after provision of AL and the Interim Northern Busway.'*; and

*'Suggestions that the AL and NB would "free up" sufficient road space to allow confiscation of general traffic lanes for bus lanes on Lutwyche Road are at best dubious and most probably false. Such action would worsen congestion on a road already operating above capacity, according to RACQ's 2004 travel time survey. The survey revealed that the average peak hour inbound speed along the section of Lutwyche between Bradshaw Street and Bowen Street was 19 km/h, with a speed as low as 8 km/h near Bowen Street, and outbound between Harris Street and Bradshaw Street the average speed was 36 km/h, with a speed as low as 26 km/h near Albion Rd.'*

Similar results were obtained in RACQ's 2007 Travel Time Survey of Gympie Road inbound from Strathpine Road to Bowen Bridge Road/Gregory Terrace intersection

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<sup>9</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, Table 7.1, p7-149

that includes Lutwyche Road, registering an 8% drop in average travel speed from 27.4 km/h to 25.2 km/h between 2004 and 2007. Low average speeds continued further inbound in 2007 compared with 2004, with the section from Roblane Street pedestrian crossing signals to Federation Street recording an average speed of just 18 km/h.

Average travel speeds also slowed on Kelvin Grove Road / Enoggera Road (Old Northern Road route) in the 2007 Travel Time Survey. The inbound journey from Alderson Street to Bishop St/Windsor Rd (1.7 km) averaged just over 12 km/h. The Northern Link EIS verifies this result by showing an inbound Level of Service (LOS) E and F along this section of Enoggera Rd / Kelvin Grove Road.<sup>10</sup>

The RACQ recommends that the more heavily impacted roads such as Lutwyche Road, Kelvin Grove Road / Enoggera Road north and south of the Northern Link tunnel connection, and the Centenary Motorway / Western Motorway, be upgraded to accommodate the increased traffic demands placed on them by Northern Link.

### **3.2 Reliance on the Inner City Bypass**

The RACQ is concerned that Northern Link will place further demand on the Inner City Bypass (ICB) to function as the critical/pivotal transport corridor for Brisbane serving Airport Link, Hale Street / Hale Street Link Bridge, Clem7 Tunnel, Kingsford Smith Drive and Northern Link.

The ICB is forecast to carry 126,000 vehicles per day in 2014 and 143,100 in 2026.<sup>11</sup> The Northern Link EIS predicts that the ICB can cater for these traffic volumes but the RACQ has severe doubts that a six-lane corridor with weaving conflicts can successfully service these volumes without regular traffic crashes/incidents.

The convergence of a number of Brisbane's major transport corridors onto the ICB (including direct access from tunnels) will ensure that any incident will have wide spread traffic flow implications and will most likely cripple the Brisbane traffic network in a matter of minutes.

The RACQ recommends that if Northern Link is to proceed, the ICB must be upgraded from six to eight lanes. A detailed incident management plan should be developed to ensure that breakdowns and incidents on the ICB and in the tunnels are responded to quickly and managed effectively.

### **3.3 Centenary Motorway / Northern Link connection**

The RACQ recommends that the Centenary Motorway / Western Motorway must be upgraded to at least a six-lane configuration, particularly for the northbound (inbound) direction, if Northern Link is to operate as a successful and viable transport corridor. Optimally this would include the potential for an ultimate eight-lane configuration from the Moggill Road entry/exit ramps north to the Northern Link connection.

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<sup>10</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, Figure 4-8

<sup>11</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, Table 9-5, p9-206

The results of the Club's 2004 and 2007 Travel Time surveys differ markedly with the Level Of Service (LOS) A attributed to the 'Western Freeway' in the Northern Link EIS.<sup>12</sup>

RACQ's surveys reveal that for both the 2007 and 2004 AM peak inbound runs, dramatic speed drops occur in the sections from Witton Road to Moggill Road and from Moggill Road to Russell Terrace. The average inbound AM peak speeds recorded along the 4.6km section of the 'Western Freeway' from Moggill Road to the Milton Road/Croydon Street intersection were never above 25km/h, indicating that a LOS E or F is more indicative of the current congestion being experienced on this corridor.

Other upgrades either being constructed or proposed at this time that will directly impact on traffic volumes using the Centenary Motorway / Western Motorway and feeding into/out of Northern Link include:

- Ipswich Motorway upgrades (three projects from Riverview to Centenary Motorway);
- Darra – Springfield Transport Corridor (Road and Rail project);
- Centenary Highway Extension (Springfield to Yamanto); and
- Kenmore Bypass

When discussing the traffic demands on the Centenary Bridge due to Northern Link, the Northern Link EIS states that<sup>13</sup>:

*'With peak spreading in the network over the next 20 years, it is considered not unreasonable to assume that a four lane cross-river facility could carry an AWDT of up to 140,000 vehicles per day;'*

The RACQ questions this comment. Based on 2007 traffic census data from the Department of Main Roads (refer to Appendix A), almost 80% of the total weekday traffic volume uses the Centenary Bridge between the peak 12 hour period from 6am until 6pm. Multiplying the total traffic (140,000 vehicles per day) by 80%, then dividing by 4 lanes, and again dividing by 12 hours will result in an average of 2333 vehicles per hour (vph), per lane, for each hour over the whole 12-hour period.

This is well in excess of the Maximum Service Flow (MSF) rate given in the *Guide to Traffic Engineering Practice, Part 2 – Roadway Capacity, 1988* of 2000 vph per lane for an ideal uninterrupted freeway segment at a design speed of 100 km/h, at LOS E. In reality, other factors such as road alignment and heavy vehicle percentage decrease the ideal MSF rate to 1800-1900 vph per lane. This is well below the 2333 vph per lane required to service 140,000 vehicles per day. At ramps or lane drops, merging and weaving manoeuvres reduce the MSF rate to well below the ideal MSF rate.

The 2007 traffic census data from the Department of Main Roads (refer to Appendix A) also reveals that the one-hour maximum peak demand at the Centenary Bridge can be in excess of 8% of the total daily volume, equating to a theoretical demand of 2800 vph per lane at the Centenary Bridge, greatly exceeding the actual 1800-1900 vph per lane the Centenary Bridge is capable of servicing.

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<sup>12</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, Figure 4-8

<sup>13</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, p1-16

Based on the above information the RACQ casts extreme doubts over the current LOS attributed to the Centenary Motorway shown in *Figure 4.8* and firmly believes that no amount of 'peak spreading' will allow 140,000 vehicles per day to cross a four-lane bridge structure without regular and extreme delays and congestion. The RACQ also reiterates its recommendation that the Centenary Motorway / Western Motorway must be upgraded to at least a six-lane configuration. Optimally an eight-lane configuration from the Moggill Road entry/exit ramps north to the Northern Link connection is recommended.

### **3.3.1 High Occupancy Toll (HOT) lanes on the Centenary Motorway / Western Motorway**

The RACQ recommends that all lanes on the Centenary Motorway/Western Motorway be designated as general purpose lanes. As mentioned previously, any decision to restrict lanes to high occupancy vehicles (including a HOT lane facility) or public transport should be evidence-based and transparent to demonstrate the implications on the level of congestion for all modes including HOV lane utilisation (vehicles per hour) and vehicle occupancies. That is, a comparison of a project with all general purpose lanes versus a GP + (HOV/HOT) lane option should be undertaken and made available for public discussion.

The Queensland Government has raised the possibility of High Occupancy Toll (HOT) lanes. Any further public discussion of HOT lanes should include acknowledgement that the additional charge on motorists (toll) does not result in any additional revenue for construction of infrastructure; rather it generally covers only the cost to establish, operate and enforce the complex charging mechanism.

The maximum vehicle capacity of a HOV or HOT lane is the same as for a general purpose lane, so any additional people throughput (person moving efficiency) is based solely on increasing vehicle occupancy.

The RACQ is unaware of any evidence in Australia of a tangible increase in vehicle occupancy as a direct result of designation of a HOV lane. HOT lanes will also reduce safety by requiring additional lane changes and creating some confusion among drivers.

As mentioned previously, implementation of HOV facilities have traditionally relied on inefficient use of lane space (vehicles per hour) to offer reliable travel times and increased travel speeds to some vehicles at the expense of all non-eligible traffic. In the past, HOV facilities have been implemented on approach roads that primarily service high activity/CBD areas, and where a realistic public transport option is available.

The Centenary Motorway/Western Motorway is, however, a multi-purpose corridor for freight, tourism and non-CBD commuters as well as for CBD bound journeys.

This corridor serves as a major link between the west of Brisbane and the future development at Australia Trade Coast, the Brisbane Airport precinct and as an element of a north-south link (western bypass) of the Brisbane CBD. This is verified in the Northern Link EIS, showing only 20% of traffic using the 'Western Freeway' connection of Northern Link is for radial or CBD related traffic<sup>14</sup>.

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<sup>14</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, Figure 9-3

The RACQ believes that any type of HOV facility (including HOT lanes) on the Centenary Motorway / Western Motorway is unjustifiable based on the multi-purpose use of this corridor as a major freight, tourism and non-CBD commuter route and the lower traffic carrying capacity of HOV lanes.

### 3.4 Coronation Drive HOV facility

The authors of the EIS argue that Northern Link will reduce traffic demand on the surface road network and allow for the potential reintroduction of transit priority initiatives, e.g., an inbound HOV lane on Coronation Drive.

The forecast traffic volume reductions relative to a “do nothing” case need to be viewed in context. In 2014, average weekday traffic on Coronation Drive west of Land Street is predicted to reduce by 20% due to Northern Link<sup>15</sup>. However, in context that is only approximately 10% less than current (2007) traffic volumes. This is a relatively small reduction overall and too insignificant to warrant the reintroduction of a transit lane.

In addition, the Northern Link EIS states that<sup>16</sup>:

*‘both Coronation Drive and Milton Road carry approximately 75% of vehicles making cross-city travel movements, that is travel between the western suburbs, Ipswich and beyond with northern suburbs, Australia Trade Coast area (including the Airport) and southside suburbs (via the Captain Cook and William Jolly Bridges). Only 25% of traffic on Milton Road and Coronation Drive relates to central city travel;’*

HOV facilities have been traditionally implemented on approach roads that primarily service high activity/CBD areas, and where a realistic public transport option is available. Coronation Drive, as mentioned in the statement above, is a multi-purpose corridor used extensively by freight and commercial vehicles, non-CBD commuters and tourism, i.e., very little traffic is CBD bound and most will continue to use Coronation Drive after Northern Link due to the small reduction in predicted traffic volumes.

Implementation of HOV facilities has also traditionally relied on inefficient use of lane space (vehicles per hour) to offer reliable travel times and increased travel speeds to some vehicles at the expense of all non-eligible traffic. In this way, HOV facilities reduce the vehicle carrying capacity (vehicles per hour) of the overall corridor and thereby offset any benefits of implementing the HOV facility in the first instance.

Insufficient lane utilisation (vehicles per hour) was the primary reason for removal of transit lanes on Coronation Drive in March 2007 and is why the RACQ has been vocal about HOV lane implementation in general. On occasions when a traffic incident has created delays and congestion, HOV lanes have been opened for use by GP traffic to shorten these delays.

The Club is not against HOV lanes *per se*, but any decision to restrict lanes to High Occupancy Vehicles (HOV) or public transport should be evidence-based and transparent to demonstrate the implications on the level of congestion for all modes including HOV lane utilisation (vehicles per hour) and vehicle occupancies.

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<sup>15</sup> Northern Link EIS: in brief, Figure 14, p37

<sup>16</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, p1-6

That is, a comparison of a project with all general purpose lanes versus a GP + HOV lane option should be undertaken and available for public discussion.

Further to these points raised above, the Northern Link EIS states that<sup>17</sup>:

*‘the opportunity for Rocket bus services from the Brisbane western suburbs to use Northern Link as an express route from the Western Freeway to access the Inner Northern Busway stations in the CBD would be provided. Queensland Transport has identified that approximately 64 planned peak period Rocket bus services each morning and evening could be re-routed to travel via Northern Link in 2014 increasing to 92 services by 2026.’*

Coronation Drive buses catering for trips between the University of Queensland and the City will use the Eleanor Schonell Bridge, Boggo Road Busway and South-East Busway, further removing bus trips along Coronation Drive.

Therefore the RACQ believes that any type of HOV facility on Coronation Drive is unjustifiable based on the:

- relatively small reduction (~10%) over current traffic volumes when Northern Link opens in 2014;
- the multi-purpose use of this corridor as a major freight, tourism and non-CBD commuter route;
- the traditionally low vehicle utilisation of HOV lanes; and
- the re-routing of bus trips from Coronation Drive to Northern Link or other Busways.

#### **4.0 Road safety**

The Northern Link EIS states that<sup>18</sup>:

*‘The Western Freeway east of the Northern Link Western Freeway ramp connections would have an overall reduction in crashes (21%). To the west of the Northern Link ramps an increase in crashes (31%) in 2026 is forecast due to the increase in traffic volumes along this section of the Western Freeway. However, the combined overall increase in the number of crashes would be small;’*

The RACQ is concerned that the Northern Link EIS concedes a 31% increase in crashes on the ‘Western Freeway’ west of the Northern Link ramp connection. The Club is committed to ensuring Queensland road projects deliver a safe and efficient road network. Any road upgrade should bring wide scale road safety and social benefits to the community, i.e., no increase in crashes on any section of the project. The RACQ believes that the 31% increase in crashes is completely unacceptable.

Congested roads can often lead to an increase in crash risk. Therefore, a high standard eight-lane Western Motorway from Moggill Road to the Northern Link connection, and a six-lane Centenary Motorway to the Ipswich Motorway, would deliver significant crash savings as well as substantial benefits to travel time and travel reliability along the corridor.

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<sup>17</sup> Northern Link Environmental Impact Statement: Volume 3 Technical Paper No 1 – Traffic and Transport, p1-22

<sup>18</sup> Northern Link EIS: in brief, Section 4.3.9, p39

## **5.0 Local Area Traffic Management (LATM)**

The Northern Link EIS states that<sup>19</sup>:

*'As this precinct will remain challenged over time by through traffic pressures, an expansion of the currently programmed local area traffic management scheme for the area would be prudent to further protect the amenity of this residential area. As part of the Traffic Management Plan for the Project supplementary LATM initiatives should be considered for the precinct extending from Milton Road in the south to Birdwood Terrace in the north and from Frederick Street in the west to Weinholt Street in the east.'*

Any considerations for expanding the programmed LATM scheme (prior to Northern Link opening) must take into account the reductions in surface road traffic after Northern Link is constructed. The RACQ believes that a high proportion of these LATM projects programmed between now and 2014 will be unnecessary and lead to increased travel times, increased vehicle emissions and a loss of amenity for the local community after Northern Link opens.

For these reasons the community must be consulted and advised of the advantages and disadvantages of any LATM treatment before and after Northern Link opens.

## **6.0 Other issues in the study area**

The RACQ provides the following comments on other issues RACQ members have raised regarding new road projects.

### **6.1 Entry and Exit Ramps**

In the past the RACQ has received complaints from members about the inadequate length of entry and exit ramps.

The Club recommends that all entry and exit ramps must be built to current motorway design specifications, e.g.:

- adequate entry ramp length to allow vehicles to match the speed of motorway traffic and select an appropriate gap to merge; and
- adequate exit ramp length to decelerate and to prevent the chances of vehicles queuing back onto the motorway.

## **7.0 Haulage**

Careful consideration should be given to the volume of haulage trips scheduled for peak traffic periods. The RACQ recommends that there be very limited spoil haulage trips undertaken during AM peak (7:00am – 9am) and PM peak (4pm – 6pm) at all worksites. Deliveries to all worksites should be similarly managed.

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<sup>19</sup> Northern Link EIS: in brief, Section 4.3.2, p36

## **8.0 Construction Impacts**

Road works, diversions and speed restrictions should be clearly signed in accordance with the *Manual of Uniform Traffic Control Devices, Part 3 – Works on Roads*.

Lane closures should be kept to a minimum and preferably only in off-peak or night operations. The Traffic Management Plan should also attempt to minimise the need to reduce the prevailing speed limits through Northern Link roadwork sites.

## **9.0 Conclusion**

The RACQ supports the Brisbane City Council's efforts to address congestion by providing additional road infrastructure in the north and west of Brisbane. Many of the comments in this submission are intended to help ensure that the benefits of Northern Link are maximised by meeting trip demands along the corridor. This will require upgrades of associated links that will experience an increase in trip demand.

However the RACQ is concerned that Northern Link has not been compared objectively and expertly with alternatives such as surface road upgrades, a no-toll option and a North West Motorway with upgraded Stafford Road, to ensure that the maximum value is obtained from this large public and private investment in our road network.

The RACQ will be monitoring the progress of this project with interest, and we would be pleased to discuss this submission with you further if required. For this purpose we invite you to contact our Executive Manager Traffic & Safety, John Wikman, on 3872 8923 or email [john.wikman@racq.com.au](mailto:john.wikman@racq.com.au).

Yours faithfully

Gary Fites  
General Manager External Relations

# APPENDIX A



## Traffic Analysis and Reporting System WEEKLY SUMMARY REPORT

District	13 METROPOLITAN DISTRICT	Mean Counts for	01-JAN-2007
Road Section	U18B JINDALEE - EVERTON PARK		30-DEC-2007
Site	130036 At the Centenary Bridge	This data is affected by a Calendar Event.	
Type	PERMANENT		
Site Stream	All Site Streams		
Traffic Class	00 All Vehicles		
Data Class	0 Volume	Range	0

Hour	Monday	%	Tuesday	%	Wednesday	%	Thursday	%	Friday	%	Saturday	%	Sunday	%	Average Week Day	%	Average Week End	%	Average Day	%
00-01	292	.4	272	.3	307	.4	348	.4	394	.5	654	1.0	769	1.4	323	.4	712	1.2	434	.6
01-02	176	.2	153	.2	173	.2	209	.3	223	.3	387	.6	461	.9	187	.2	424	.7	255	.3
02-03	147	.2	139	.2	149	.2	176	.2	188	.2	290	.4	339	.6	160	.2	315	.5	204	.3
03-04	239	.3	210	.3	220	.3	228	.3	246	.3	282	.4	292	.5	229	.3	287	.5	245	.3
04-05	604	.8	599	.8	604	.8	622	.8	623	.8	452	.7	350	.6	610	.8	401	.7	551	.7
05-06	2350	3.2	2502	3.2	2466	3.1	2514	3.0	2419	3.0	1206	1.8	664	1.2	2450	3.1	935	1.6	2017	2.7
06-07	4757	6.4	5156	6.6	5045	6.4	5129	6.2	4840	5.9	1768	2.7	998	1.9	4985	6.3	1383	2.3	3956	5.4
07-08	6019	8.1	6389	8.2	6296	8.0	6375	7.7	6058	7.4	2616	3.9	1418	2.6	6227	7.9	2017	3.3	5024	6.8
08-09	5481	7.4	5785	7.4	5738	7.3	5856	7.1	5608	6.8	3867	5.8	2327	4.3	5694	7.2	3097	5.1	4952	6.7
09-10	4394	5.9	4624	5.9	4622	5.9	4787	5.8	4721	5.8	4628	6.9	3671	6.8	4630	5.9	4150	6.9	4492	6.1
10-11	3996	5.4	4088	5.2	4133	5.3	4269	5.2	4400	5.4	5173	7.8	4130	7.7	4177	5.3	4652	7.7	4313	5.9
11-12	4027	5.4	4143	5.3	4159	5.3	4282	5.2	4520	5.5	5357	8.0	4519	8.4	4226	5.3	4938	8.2	4430	6.0
12-13	3988	5.4	4075	5.2	4086	5.2	4261	5.2	4575	5.6	5225	7.8	4400	8.2	4197	5.3	4813	8.0	4373	5.9
13-14	4103	5.5	4159	5.3	4210	5.4	4377	5.3	4707	5.7	4831	7.3	4167	7.7	4311	5.5	4499	7.5	4365	5.9
14-15	4788	6.5	4899	6.3	4956	6.3	5121	6.2	5461	6.7	4664	7.0	4165	7.7	5045	6.4	4415	7.3	4855	6.6
15-16	5696	7.7	5868	7.5	5932	7.6	6117	7.4	6170	7.5	4501	6.8	4310	8.0	5957	7.5	4406	7.3	5513	7.5
16-17	6114	8.3	6406	8.2	6360	8.1	6586	8.0	6328	7.7	4474	6.7	4323	8.0	6359	8.0	4399	7.3	5799	7.9
17-18	6258	8.5	6614	8.5	6570	8.4	6726	8.2	6432	7.8	4433	6.7	3726	6.8	6520	8.3	4080	6.8	5823	7.9
18-19	4128	5.6	4545	5.8	4575	5.8	4982	6.0	4818	5.9	3429	5.1	2781	5.2	4610	5.8	3105	5.2	4180	5.7
19-20	2222	3.0	2513	3.2	2539	3.2	3098	3.8	2842	3.5	2126	3.2	1889	3.5	2643	3.3	2008	3.3	2451	3.3
20-21	1592	2.1	1845	2.4	1824	2.3	2341	2.8	1913	2.3	1635	2.5	1596	3.0	1903	2.4	1616	2.7	1821	2.5
21-22	1353	1.8	1613	2.1	1621	2.1	2157	2.6	1801	2.2	1674	2.5	1306	2.4	1709	2.2	1490	2.5	1646	2.2
22-23	857	1.2	1063	1.4	1156	1.5	1182	1.4	1584	1.9	1631	2.4	816	1.5	1168	1.5	1224	2.0	1184	1.6
23-24	467	.6	561	.7	630	.8	700	.8	1094	1.3	1305	2.0	480	.9	690	.9	893	1.5	748	1.0

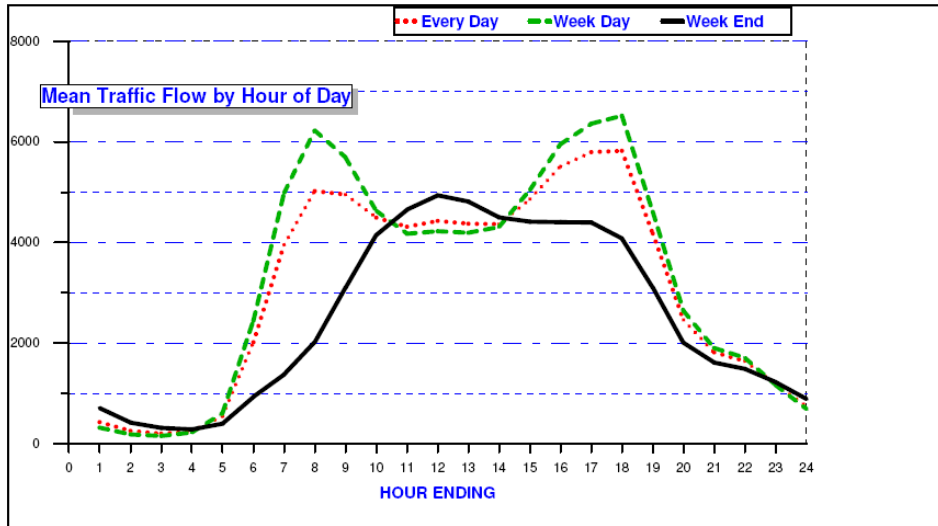
Peaks	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value
AM	8:15	6014	8:00	6376	8:00	6249	8:00	6387	8:15	6100	12:15	5360	12:30	4581	8:15	6216	12:15	4977	8:15	5112
PM	17:30	6323	17:45	6671	17:45	6591	17:45	6805	17:45	6476	13:00	5220	13:00	4399	17:45	6571	13:00	4818	17:30	5931

12 Hour	58,992	79.7	61,595	78.7	61,637	78.6	63,739	77.3	63,798	77.8	53,198	79.9	43,937	81.5	61,952	78.4	48,568	80.6	58,128	78.9
16 Hour	68,916	93.1	72,722	93.0	72,666	92.7	76,464	92.7	75,194	91.7	60,401	90.7	49,726	92.3	73,192	92.6	55,064	91.4	68,013	92.3
18 Hour	70,240	94.9	74,346	95.0	74,452	95.0	78,346	95.0	77,872	95.0	63,337	95.1	51,022	94.7	75,051	95.0	57,180	94.9	69,945	95.0
24 Hour	74,048	100.0	78,221	100.0	78,371	100.0	82,443	100.0	81,965	100.0	66,608	100.0	53,897	100.0	79,010	100.0	60,253	100.0	73,650	100.0

AVG Week Day	93.7%	99.0%	99.2%	104.3%	103.7%			100.0%	76.3%	93.2%
AVG Week End						110.5%	89.5%	131.1%	100.0%	122.2%
AVG Day	100.5%	106.2%	106.4%	111.9%	111.3%	90.4%	73.2%	107.3%	81.8%	107.0%



(Source:

[http://131940.qld.gov.au/Traffic%20Census/Traffic%20Census%20Data/Metro%20Data/2\\_Traffic%20Counts/1\\_Permanent%20Counts/2007/U18B/130036\\_T.pdf](http://131940.qld.gov.au/Traffic%20Census/Traffic%20Census%20Data/Metro%20Data/2_Traffic%20Counts/1_Permanent%20Counts/2007/U18B/130036_T.pdf))